IV. "Second Supplementary Paper on the Calculation of the Numerical Value of Euler's Constant." By WILLIAM SHANKS, Houghton-le-Spring, Durham. Communicated by the Rev. Professor PRICE, F.R.S. Received August 29, 1867.

When $n=2000$, we have

$$1+\tfrac{1}{2}+\tfrac{1}{3}+\dots\tfrac{1}{2000}$$
$$=8{\cdot}17836\ 81036\ 10282\ 40957\ 76565\ 71641\ 69368\ 79354\ 66740\ 91251\ 77402\ 20409\ 26320\ 14205\ 58039\ 78429\ 87946\ 27554\ 87631\ 13645+$$

$$E={\cdot}57721\ 56649\ 01532\ 86060\ 65120\ 90082\ 40243\ 10421\ 59335\ 93995\ 35988\ 05772\ 51046\ 48794\ 94723\ 80546$$ (last term is $-\dfrac{B_{12}}{24\ .\ 2000^{24}}$).

Here the 60th decimal place in the value of E is the same when n is 2000 as it is when n is 1000.

When $n=500$, we have in the value of E, 60th decimal and onwards	1 53865 48677 &c.
,, 1000, ,, ,, ,,	2 02455 61942 &c.
,, 2000, ,, ,, ,,	2 51046 48794 &c.
By subtracting the first of these three from the second, we have	48590 13265
By subtracting the second from the third, we have	48590 86852

It is somewhat remarkable that these differences are the same to five places of decimals; and it may be observed that the value of E will probably be changed and extended very slowly indeed by employing higher values of n. The remark in the previous Supplementary Paper*, as to n being 50000 or even 100000 in order to obtain probably about 100 places of decimals in E, seems, the author now thinks, to be not well founded; and he hesitates even to conjecture what number of terms of the Harmonic Progression should be "summed" to ensure accuracy in the value of E to 100 decimals.

* Proceedings, vol. xv. p. 429.